

**REMARKS**

The present amendments and remarks are in response to the Office Action mailed March 25, 2004, where claims 1-15 were rejected. Claims 1-15 are currently pending before the Examiner.

Reconsideration of the application is respectfully requested in view of the amendments and the following responsive remarks. For the Examiner's convenience and reference, the Applicants' remarks are presented in the order in which the corresponding issues were raised in the Office Action.

In the Office Action mailed March 25, 2004:

- 1) claims 1-5 and 9-13 were rejected under 35 U.S.C. 103(a) as being unpatentable over EP 960837 (hereinafter "Tognetti" and previously referred to as "Mauro") in view of U.S. Pat. No. 6,357,868 (hereinafter "Pfaff");
- 2) claims 6 and 14 were rejected under 35 U.S.C. 103(a) as being unpatentable over Tognetti in view of Pfaff as applied to claims 1-5, and further in view of U.S. Patent No. 4,256,493 (hereinafter "Yokoyama");
- 3) claims 7 and 15 were rejected under 35 U.S.C. 103(a) as being unpatentable over Tognetti in view of Pfaff as applied to claims 1-5, and further in view of U.S. Patent No. 4,136,076 (hereinafter "Daniels"); and
- 4) claim 8 was rejected under 35 U.S.C. 103(a) as being unpatentable over Tognetti in view of Pfaff as applied to claims 1-5, and further in view of U.S. Patent No. 6,283,589 (hereinafter "Gelbart").

### **Rejections under Tognetti**

The Applicants object to the Examiner's repeated issuance of obviousness rejections under the same primary prior art reference. In each of the previous Office Actions, the Examiner has issued rejections under Tognetti in combination with a different secondary reference. First, it was Tognetti (previously referred to as Mauro) in view of Kimura, then it was Tognetti in view of Noguchi, then it was Tognetti in view of Withington, and now, it is Tognetti in view of Pfaff. In each rejection the Examiner has tried to link Tognetti, which is in no way related to ink-jet technologies, with a reference that teaches ink-jetting. It appears as though the Examiner is not thoroughly reviewing the responses to the prior Office Actions because in each response, the Applicant outlines how the teachings of Tognetti are repugnant to a combination with ink-jet technologies. Where Tognetti teaches the desire to have "bleeding," "spreading of colours," "haloes," "mottling," and "chiaroscuro zones," ink-jet printing is well known in the art to represent digital printing, high resolution, high speeds, sharp images, etc. Additionally, many of the improvements in the art of ink-jet technologies are often to improve these characteristics and make ink-jet printing even more accurate. Accordingly, there is nothing in Tognetti that would lead one of ordinary skill in the art to combine it with any ink-jet reference whatsoever.

Additionally, each of the previous Office Actions has used the exact same tertiary references of Yokoyama, Daniels and Gelbart in the rejections to the dependent claims. In each rejection, it appears that the Examiner has merely copied the rejection from the previous Office Action and pasted it into the next Office Action without reviewing its applicability or combinability with Tognetti or the secondary reference. In each of the responses, the Applicant has repeatedly shown that these references have been sought for the specific teachings of transition metal salts, metal ions provided by transition metal sulfates, and the use of an additional coating to be used against the rejected claims, and their combination with

Tognetti is not motivated by the teachings therein. None of these tertiary references has anything to do with printing on ceramics prior to firing, and the motivation for their combination cannot come from the secondary reference because the secondary reference has been different in each rejection. Therefore, as the secondary reference keeps changing, it is implausible that the secondary reference can be the basis for the motivation each and every time. Thus, it must be the Examiner's position that the motivation comes from Tognetti. However, nothing in Tognetti teaches an ultraviolet absorbing agent, yet the Examiner's motivation for the Yokoyama reference states that the motivation for combination is to improve the light-resistance in the presence of a water-soluble ultraviolet absorbing agent. How can this be motivation when Tognetti does not even disclose a water-soluble ultraviolet absorbing agent? With respect to Daniels, the Applicants have argued that it does not even teach transition metal sulfates, and it does not even recite the term "sulfates," yet the rejections under Daniels keep being issued by the Examiner.

Based on the file history as a whole, it appears obvious that the Examiner is using hindsight analysis to pick and choose the secondary references in an attempt to provide Tognetti with an ink-jetting step. Further, the rejections under the tertiary references have been cut and pasted from one office action to another, which prevents them their combination from being motivated by the currently applied secondary reference. As such, the Applicants' respectfully request that Tognetti be permanently removed as a reference from which to issue obviousness rejections therefrom. Also, the tertiary references of Yokoyama, Daniels and Gelbart should be removed because there is no realistic way that Tognetti, or each reference itself, could be the basis for the motivation stated by the Examiner, and the same motivation cannot be carried from one secondary reference to each and every other secondary reference. Thus, the Applicants respectfully request withdrawal of all rejections under all of the prior art

references recited within this Office Action, and request allowance of all of the currently pending claims.

As a corollary to the above, it is to be noted that the Examiner's extended prosecution of this application is in contravention with the clearly expressed directions given in the Manual of Patent Examining Procedure (MPEP). The continued substitution of one secondary reference for another in four office actions is clearly contrary to MPEP 706.07 – Final Rejection, which states, in part:

... Switching ... from one set of references to another by the examiner in rejecting in successive actions claims of substantially the same subject matter, will ... tend to defeat attaining the goal of reaching a clearly defined issue for an early termination, i.e., either an allowance or the application of a final rejection.

Further, the Examiner's constant switching of one reference for another, without justification therefor, is clearly contraindicated in MPEP 904.03 – Conducting the Search, which states:

It is a prerequisite to a speedy and just determination of the issues involved in the examination of an application that a careful and comprehensive search, commensurate with the limitations appearing in the most detailed claims in the case, be made in preparing the first action on the merits so that the second action on the merits can be made final or the application allowed with no further searching other than to update the original search.

This is the fourth office action rejecting claims drawn to the same subject matter and there is no indication that such was issued under the auspices of a Supervisory Patent Examiner as required by MPEP 707.02 - Applications Up for Third Action and 5-Year Applications, which states:

The supervisory patent examiners should impress their assistants with the fact that the shortest path to the final disposition of an application is by finding the best references on the first search and carefully applying them.

The supervisory patent examiners are expected to personally check on the pendency of every application which is up for the third or subsequent official action with a view to finally concluding its prosecution.

Consistent with the above directives from the MPEP, Applicants respectfully protest the extra time and expense they have been required to expend by the inattention given to this application by randomly selecting secondary references, none of which are more pertinent than the others, and continuing to reject the claims without any justification as to why such switching was necessary. Applicants respectfully request that this response be considered by a Supervisory Patent Examiner and the claims be allowed or, in the alternative, finally rejected without the citation of additional prior art.

**Rejections under 35 U.S.C. 103(a)**

Before discussing the obviousness rejections herein, it is thought proper to briefly state what is required to sustain such a rejection. The issue under § 103 is whether the PTO has stated a case of *prima facie* obviousness. According to the MPEP § 2142, the Examiner has the burden and must establish a case of *prima facie* obviousness by showing some motivation in a prior art reference to modify that reference, or combine that reference with multiple references, to teach all the claim limitations in the instant application. The Applicants respectfully assert the Examiner has not satisfied the requirement for establishing a case of *prima facie* obviousness in these rejections.

Tognetti in view of Pfaff

The Examiner has rejected claims 1-15 under 35 U.S.C. 103(a). In every rejection made by the Examiner, Tognetti is cited as the primary reference and Pfaff is cited as a secondary reference. Certain dependent claims are rejected using tertiary references. All of these rejections are respectfully believed to be based on an erroneous interpretation of Pfaff when taken as a whole and applied to the presently claimed invention.

Claims 1-5 and 9-13 were rejected under 35 U.S.C. 103(a) as being unpatentable over Tognetti in view of Pfaff. The Applicants assert that neither of these prior art references provides the motivation for their combination, and that the combination thereof still does not establish a case of *prima facie* obviousness. Further, as independent claims 1 and 9 have been amended herein, additional support for this position is also present..

Tognetti teaches application of a colorant by silk-screening, direct printing, and rotogravure. See paragraph 0019 and Abstract. In one embodiment of Tognetti, the glazed surface is taught to be decorated with one or more silk-screen applications, using known-type inks composed of colorant powders and a traditional medium. Tognetti teaches the desire to achieve ". . . a sort of watercolour-type effect, [is] particularly aesthetically pleasing. In obtaining this effect, an important role is played by the waterproofed or semi-waterproofed surface of the tile, done before depositing the decoration comprising the chromophore salts. In fact, during phase 3), the 'washing' and 'bleeding' phase, the colorant salts present in the decoration composition can easily migrate and diffuse over the surface of the tile." See paragraphs 0028 and 0029. Tognetti provides numerous additional examples that teach away from high resolution printing. For example, paragraph 0005, states "[t]he present invention makes available a process for realizing aethetically-pleasing (sic) decorations on ceramic tiles which can provide interesting and ornamental effects." Also, Tognetti teaches the desire for "causing movement of a part of the decoration itself. In other words, the liquid causes a sort

of 'bleeding' of the decoration deposited on the waterproof coat, and takes along with it (at least partially) the chromophore salts contained in the liquid medium part of the decoration." See paragraph 0023. In addition, Tognetti teaches, "[t]he chromophore salts, by effect of the bleeding action of the sprayed liquid, are distanced from the original deposit zone and are thus spread more or less randomly over the glazed surface." See paragraph 0024. Further, Tognetti teaches, "[t]his operation contributes to further bleeding of the chromophore salts over the surface of the tile and thus a further spreading of colours." See paragraph 0025. Still further, Tognetti teaches, "[t]he decoration which emerges following washing and blowing, and subsequent firing, is characterized (sic) by haloes, mottling and chiaroscuro zones." See paragraph 0027. However, Tognetti's silence as to the desire for high resolution, along with the direct teachings of Tognetti related to reducing resolution for creating the above described unique effects are incompatible with ink-jet printing. Specifically, Tognetti is completely devoid of teaching anything related to ink-jet printing technology, or its applicability to the instantly claimed invention.

Pfaff teaches a method of ink-jet printing a solid thermoplastic colour paste having a high content of inorganic pigments and/or ceramics decorative colours. The solid thermoplastic paste can have a content of over 50 wt% inorganic materials, such as inorganic pigments and glass flux. See column 2, lines 20-30. However, the composition that is ink-jet printed in accordance with the teachings of Pfaff should not be confused with conventional ink-jet printing processes that jets inks with very low viscosities because the Pfaff reference explicitly delineates the solid thermoplastic colour paste from conventional liquid inks. See column 1, lines 30-53. Specifically, Pfaff teaches that in order to print the solid colour paste it needs to be heated to a temperature above its melting point, and when the heat is switched off, "the thermoplastic colour paste solidifies immediately, so that no sedimentation occurs." See column 2, lines 45-67. With respect to the precision of ink-jet printing, Pfaff teaches that

the object to be printed on should be approximately 1 cm from the nozzle opening, so that the "colour paste emerging in drop form is placed accurately and thereby solidifies." See column 4, lines 56-59. On the other hand, Pfaff is completely devoid of teaching that the ink-jet printed image should have any of the Tognetti characteristics, such as bleeding or spreading, as described above, and/or that the image should be "characterised by haloes, mottling and chiaroscuro zones." Pfaff does not teach that conventional liquid ink-jet inks can perform in accordance with the invention described therein.

As the Examiner is aware, the prior art relied upon must contain some motivation for one skilled in the art to modify or combine references. In rejecting independent claims 1 and 9, the Examiner has failed to point to anything in Tognetti that would even suggest that a jetting process could be used to apply chromophores to an article for firing. In other words, in order to properly combine Tognetti with Pfaff (or any other ink-jetting reference for that matter), there has to be some motivation in Tognetti to combine it with a reference that teaches ink-jetting as a step. Alternatively, there is also nothing in Pfaff to motivate its combination with Tognetti. The motivation provided in the Office Action by the Examiner is completely unrelated to the method step that is absent in Tognetti. Specifically, the Examiner stated as follows:

"Pfaff shows that direct printing and inkjet printing is an equivalent structure known in the art (column 2: lines 35-42). Therefore, because direct printing and inkjet printing were recognized equivalents at the time the invention was made, one of ordinary skill in the art would have found it obvious to substitute ink jet printing for directing (sic)." See page 3 of Office Action dated March 25, 2004.

The Applicants respectfully assert that this motivation is based on a misinterpretation of the teachings within the Pfaff reference.

While Pfaff does say, "by means of direct or indirect printing," it is in reference to "the colour paste being printed by means of ink-jet technology . . . is applied to the surface of the material to be decorated or to a transfer material by means of heatable ink-jet head . . ."



See column 2, lines 42-47. Additionally, Pfaff states, "[the] invention relates to a method of decorating the surface of hard materials . . . by direct or indirect printing using a colour paste containing a pigment and a thermoplastic medium (thermoplastic colour paste), the colour paste being printed onto the material to be decorated or onto a transfer material by means of ink-jet technology. See column 1, lines 5-11. Further, Pfaff states, "it is also possible to use the method according to the invention to produce a transfer material, carrying the decoration, for indirect printing." See column 3, lines 64-66. Furthermore, the Examples set forth that direct printing is meant to be ink-jet printing by using an "ink-jet printing device for the direct decoration of glass, enamel, stoneware, and porcelain." See column 5, lines 43-45. This was contrasted to indirect printing by teaching that "for indirect printing, transfers were produced . . . printed by means of ink-jet device . . . [and] the image was transferred to the object to be decorated." See column 5, lines. 57-63. Accordingly, Pfaff actually teaches that its meaning of direct printing is when the ink-jet prints directly on the article, and indirect printing is when material is printed onto a medium that is then transferred onto the article. Thus, the Pfaff reference does not teach what the Examiner has asserted in support of combining these references.

Since Pfaff does not teach that the direct printing of Tognetti and ink-jet printing are equivalent, or considered to be equivalent by one of ordinary skill in the art, the rejections are based on an erroneous interpretation of the art. The Applicants respectfully assert that there is nothing within either Tognetti or Pfaff to lead one of ordinary skill in the art to the teachings of the other because each teaches a mutually exclusive process to obtain a distinctly different visual effect. Accordingly, the combination of Tognetti and Pfaff is improper, and does not establish a case of *prima facie* obviousness.

Even if Tognetti and Pfaff could be combined, they still do not teach each and every element of the claimed invention. It is important to note that conventional liquid or aqueous

ink-jettable compositions differ substantially from the color-imparting compositions that are applied by other methods, such as the direct printing methods of Tognetti. Additionally, Pfaff itself delineates conventional liquid inks for ink-jet printing from the ink-jet printing of the solid thermoplastic colour paste that is described therein. As one of ordinary skill in the art knows, particulate size, fluid viscosity, and other variables are very important considerations taken into account in making a liquid aqueous composition that is capable of use in conventional ink-jet applications. Conventional ink-jet printing requires much different viscosities and printing fluid characteristics in comparison with the printing of Tognetti and the solid thermoplastic paste of Pfaff.

Even though Tognetti and Pfaff cannot properly be combined, in order to expedite prosecution, the Applicants have amended the independent claims to include the limitation that the ink-jettable chromophore-containing fluid is aqueous. Thus, as Tognetti fails to teach “ink-jettable” and Pfaff fails to teach its jettable compositions are “aqueous,” each and every element is not present in the combination. In other words, nothing in Tognetti or Pfaff teaches that chromophore-containing fluid is an aqueous ink-jettable composition that can be jetted onto an article and then fired as part of a method for digitally printing on an article.

Since there is no motivation to combine Tognetti and Pfaff, and even when combined Tognetti and Pfaff do not teach each and every element of the claimed invention, a *prima facie* obviousness cannot stand. Accordingly, the Applicants respectfully request withdrawal of these rejections.

#### Tognetti teaches away from the claimed invention

With respect to claim 2, the Applicants respectfully assert that Tognetti teaches away from the claimed invention. Tognetti references printing processes such as silk screening, direct printing, rotogravure, etc. Conventional ink-jet printing with an aqueous ink-jet ink

would not be considered to be within this category of printing by one skilled in the art. In the rejection, the Examiner states that Tognetti teaches an "underprinting agent." This is a misstatement of the teachings of Tognetti. Specifically, Tognetti discusses "... forming on an upper glazed and non-vitrified surface of a tile of a waterproof or semi-waterproof surface, by means of the application of a continuous and insulation layer of an appropriate material, either waterproof or semi-waterproof . . ." See page 2, lines 33-35. This does not support the notion that the glazes described in Tognetti teach of underprinting agents as defined by Applicants on pages 9 and 10 of the present application. The Applicants teach an underprinting agent to include chemicals that "... interacts with a chromophore compound to form an insoluble precipitate at or near the surface of the glazing fluid or article itself, or otherwise alters the solubility and/or mobility of the chromophore." See page 9, lines 8-12. The instant application teaches that the underprinting agent enhances "high resolution" in ink-jet printing by precipitating the colorant at the location of printing. However, this concept is not even relevant to Tognetti because of its teaching that the waterproof coating allows for "bleeding" of the chromophore salts, which is inapposite to "high resolution" ink-jet printing. A reference that teaches away from the claimed invention cannot make the claimed invention obvious. Since Tognetti teaches away from that which is claimed in the instant invention, it is an improper reference to be used in support of the rejection. As such, the Applicants respectfully request withdrawal of this rejection.

#### Tognetti in view of Pfaff and Yokoyama

The Examiner has rejected claims 6 and 14 under 35 U.S.C. 103(a) as being unpatentable over Tognetti in view of Pfaff, and further in view of Yokoyama. Apparently, Yokoyama was specifically sought out for its teachings of a chromophore-containing fluid

having nitrates, chlorides, acetates, chromates, citrates, or sulfates because it teaches nothing related to either Tognetti or Pfaff.

As stated previously, the combination of references is only proper when there is motivation within the prior art references to do so. Accordingly, the previous discussion pertaining to the improper combination of Tognetti and Pfaff is incorporated herein by reference. Briefly, Tognetti teaches printing on a firable material by means that result in "bleeding," "haloes," and "randomly spread chromophores." Alternately, Pfaff teaches ink-jet printing a solid thermoplastic colour paste on a firable material. Here, Yokoyama teaches an aqueous ink-jet ink for ink-jet printing letters (col. 8, ln. 8), and does not teach printing on a firable material. Additionally, Yokoyama teaches "water-soluble compounds . . . capable of improving light-resistance . . . [and] a specific metal salt can remarkably improve the light-resistance in the presence of a water-soluble ultraviolet absorbing agent." See column. 5, line 67 to column 6, line 4. However, neither Tognetti nor Pfaff teach anything related to water-soluble ultraviolet absorbing agents.

In view of the foregoing, the combination of either Tognetti and/or Pfaff with Yokoyama is improper because of the same reasons employed in showing the lack of motivation for the combination of Tognetti and Pfaff. The inclusion of Yokoyama does not cure the defects within Tognetti and Pfaff, and does not provide any motivation to be combined with these references. Thus, the combination of Tognetti, Pfaff, and Yokoyama is improper. Reconsideration and withdrawal of the rejections to claims 6 and 14 is respectfully requested.

#### Tognetti in view of Pfaff and Daniels

The Examiner has rejected claims 7 and 15 under 35 U.S.C. 103(a) as being unpatentable over Tognetti in view of Pfaff, and further in view of Daniels. The Applicants

respectfully assert that Daniels was improperly combined with Tognetti and Pfaff because it teaches nothing about metal ions provided by the "transition metal sulfate salt."

The Applicants assert the Examiner has misconstrued the teachings of Daniels by stating, "Daniels teaches the metal ion provided by the transition metal sulfate salt is selected from the group consisting of cobalt, nickel, and tin." However, Daniels is entirely devoid of the terms "sulfate" and "sulfate salt." Daniels uses the terms "cobalt," "nickel," and "tin" only in the context of being used to cross-link a polymer in a lower pH condition. See col. 3, lines 6-13. Thus, contrary to the Examiner's assertion, Daniels does not teach transition metal sulfate salts.

Additionally, the previous discussion pertaining to the improper combination by the lack of motivation to combine Tognetti and Pfaff is incorporated herein by reference. Here, the Examiner has stated the motivation to additionally combine Daniels with these two references is " . . . to obtain fast drying with good extended print quality." The Examiner cites col. 3, lines 59-60 of Daniels for support of this motivation. However, this teaching has nothing to do with Tognetti or Pfaff, especially since the molten paste of Pfaff does not dry, but only solidifies after printing. While the Daniels citation does make this statement, the phrase is being taken out of context from the teachings of Daniels, as the Examiner is insinuating the metal ions provide these characteristics. The drying characteristic of Daniels is actually provided by the required "volatile base" (col. 3, ln. 5) and the cross-linkable polymers such as BRIGHT PLATE 23 (col. 3, ln. 5-40). The fact that Daniels does not even teach a single "transition metal sulfate salt" shows the Examiner's combination of these references lacks motivation and is improper. Accordingly, the Applicants respectfully request withdrawal of the rejections to claims 7 and 15.

Tognetti in view of Pfaff and Gelbart

The Examiner has rejected claim 8 under 35 U.S.C. 103(a) as being unpatentable over Tognetti in view of Pfaff, and further in view Gelbart. The applicants respectfully assert that the combination of Gelbart with Tognetti and Pfaff is not motivated by any of these references, and even when combined, it fails to teach each and every element of the claim 8.

The previous discussion regarding the improper combination of Tognetti and Pfaff is incorporated herein by reference. The addition of Gelbart to these references does not cure the above-mentioned defects. Gelbart was merely sought out as a reference because it teaches spraying an additional layer onto a printed sheet. However, Gelbart explicitly states this is done in the alternative to heat fusing the ink onto plain paper. Since claim 8 specifies that the layer is added prior to firing, Gelbart is inapplicable. Specifically, Gelbart does not teach anything about an additional coating prior to firing. Because of the totality of the previous reasons stated that show a lack of motivation to combine these references, the Applicants respectfully request withdrawal of the rejection to claim 8.

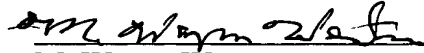
**CONCLUSION**

In view of the foregoing, Applicants believe that claims 1-15 present allowable subject matter and allowance is respectfully requested. If any impediment to the allowance of these claims remains after consideration of the above remarks, and such impediment could be removed during a telephone interview, the Examiner is invited to telephone Brad Haymond at (541) 715-0159 so that such issues may be resolved as expeditiously as possible.

Please charge any additional fees except for Issue Fee or credit any overpayment to  
Deposit Account No. 08-2025.

Dated this 18<sup>th</sup> day of May 2004.

Respectfully submitted,



M. Wayne Western  
Attorney for Applicants  
Registration No. 22,788

Gary P. Oakeson  
Attorney for Applicants  
Registration No. 44,266

Of:

THORPE NORTH & WESTERN, LLP  
8180 South 700 East, Suite 200  
Sandy, Utah 84070  
(801) 566-6633

On Behalf Of:  
HEWLETT-PACKARD COMPANY  
1000 NE Circle Blvd., m/s 422B  
Corvallis, OR 97330-4239  
(541) 715-0159

MWW/GPO/JB